

REMARKS

The objection to the claims based upon improper dependency and the rejection of claims 31-34 under 35 U.S.C. § 112, ¶ 2 are deemed fully addressed by the foregoing non-limiting claim amendment set address antecedent basis.

The rejections of claims 20, 21, 26 and 27 as being unpatentable over Togai et al. '181 in view of Togai et al. '205, of claims 22, 23, 28 and 29 as being unpatentable over O'Connell et al. in view of Togai et al. '205, of claims 31, 32, 35 and 36 as being unpatentable over Togai et al. '181 in view of Togai et al. '205 and Etoh, and of claims 33, 34, 37 and 38 as being unpatentable over O'Connell in view of Togai et al. '205 and Etoh, all under 35 U.S.C. § 103(a), are traversed. Reconsideration of each of these rejections is respectfully requested in light of the foregoing amendments and following comments.

The method and apparatus claims herein now make abundantly clear that the present invention provides that a vehicle can be operated selectively in a first running mode or a second running mode. The first running mode is a normal drive mode in which a vehicle is controlled in accordance with the amount that the accelerator pedal is depressed by a driver. The second mode is an automatic drive mode such as a cruise control (a constant vehicle speed control) or a constant headway distance control. The first target value of the first running mode is determined on the basis of a depressed accelerator pedal stroke. The second target value of the second running mode is determined based on a target vehicle speed (V_t) or a headway distance (S_t) of the vehicle.

In addition, during a transient state of the vehicle when the first running mode (normal drive mode) is changed to the second running mode (automatic drive mode), the drive shaft torque or engine torque can be controlled according to a third target value (T_{tar}) different from the first and second target values so as to avoid a heavy shock of the vehicle due to a sharp change (Δk) of the target value. The third target value is gradually varied from the first target value to the second target value during a certain transient period (T_s) as shown in Fig. 3. None of this is even remotely suggested in the cited prior art.

The Togai et al. '181 patent teaches a vehicle control mode wherein a target driving shaft torque of a vehicle is determined in accordance with the operating stroke of the accelerator pedal. (column 2, lines 11-50). This vehicle control mode corresponds to the first running mode of the present invention. The Togai et al. '181 patent does not teach another vehicle control mode corresponding to the second running mode of the present invention wherein the driving shaft torque of the vehicle is controlled according to a second target value determined from at least a target vehicle speed or a headway distance of said vehicle. That is, the Togai et al. '181 patent neither teaches nor suggest that when the running mode is changed from the first running mode to the second running mode, a third target value which varies from the first target value to the second target value is set in the changing over time period (T_s). The Togai et al. '181 patent problem caused by a heavy shock of the vehicle due to a sharp change of the target value in the mode change.

The Togai et al. '205 patent involves a transmission control system wherein the transmission ration changing speed (V_m) corresponding to the deviation (Δi) between the target transmission ration (i_o driving condition) and an actual transmission ration (i_n) of a CVT (35) is determined in order to smoothly decreases the deviation (Δi) (column 8, lines 25-42). The Togai et al. '205 patent also does not consider the problem of heavy shock value in the mode change between the different running modes. The Togai et al. '205 does not teach or suggest that when the running mode is changed from the normal running mode to the automatic running mode, a third target value which varies from the first target value to the second target value is set in the changing over time period.

The Office Action incorrectly states that the Togai et al. '205 patent discloses setting a third target value. The Examiner appears to take the position that the target transmission ratio (i_o), the actual transmission ration (i_n) and the transmission ration changing speed (V_m) correspond to the first target value, the second target value, and the third target value, respectively of the present invention. The actual transmission ratio (i_n) is, however, not a target value.

The O'Connell et al. patent teaches only that the engine torque is controlled in various running environments of the vehicle (column 6, line 7 to column 8, line 27). It is silent, however on the change of mode between different running modes, and does not teach or suggest that when the running mode is changed from the normal running mode to the automatic running mode, a third

target value which varies from the first target value to the second target value is set in the changing over time period. The Etoh patent is no more relevant and does not cure the basic flaw in legal reasoning in hypothetically combining the Togai et al. '205 patent with either of the Togai et al. '181 or O'Connell et al. patents.

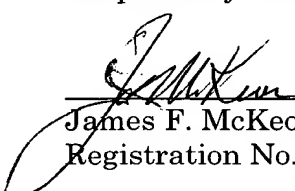
Accordingly, early and favorable action is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #056203.44307C2).

Respectfully submitted,

January 12, 2004


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